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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,348	08/03/2006	Patrick A Watts	5647-001	8664
24112 7590 01/31/2008 COATS & BENNETT, PLLC 1400 Crescent Green, Suite 300 Cary, NC 27518			EXAMINER SELF, SHELLEY M	
			ART UNIT 3725	PAPER NUMBER
			MAIL DATE 01/31/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,348	Applicant(s) WATTS, PATRICK A	
	Examiner Shelley Self	Art Unit 3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The amendment filed on November 20, 2007 has been considered but is ineffective to overcome the prior art reference and an action on the merits follows.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the radius of *the rotor varies around the circumference* (clm. 5) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1, 2, 9-15, 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With regard to claim 1, the term, "they" renders the claim vague and indefinite. Examiner suggests clear and positive recitation of structure to what "they" refers. For example, --said cutting tips--.

With regard to claims 9-15 the claims are not clear. Examiner notes the parent claim 6 clearly recites, "...a polygonal rotor having a plurality of slots...a plurality of teeth, each tooth comprising a main body including a slot" therefore the recitation, "each slot" (clm. 9), "the slots" (clm. 10, 11, 15), "the number of slots" (clm. 12), and "at least one slot" (clm. 13, 14) do not find clear antecedent basis within the claims as it is not clear which slot(s), i.e., that of the rotor or that of the tooth are being referenced. Clarification is required.

Claim Rejections - 35 USC § 102

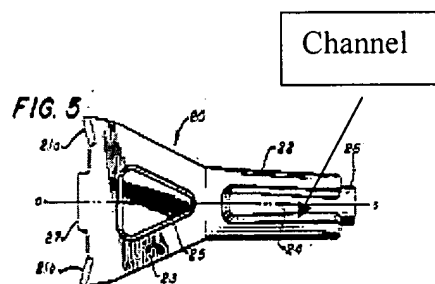
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4 and 16-18 as best as can be understood are rejected under 35 U.S.C. 102(b) as being anticipated by Heckenhauer (4,193,638). With regard to claim 1, Heckenhauer discloses a tooth and rotor (fig. 2) comprising a main body (fig. 8) comprising two substantially planer surfaces (fig. 9) at least one cutting face connected to and extending away from the main body; wherein the cutting face includes at least two cutting tips (41a, 41b, 41c, 41d) which are oriented generally perpendicular to each other (fig. 9) such that they cut in orthogonal directions simultaneously when said tooth is rotated about an axis spaced from said tooth; wherein said rotor comprises slots (fig. 3). Examiner notes the holders (12) of Heckenhauer operate as slots.

With regard to claim 2, Heckenhauer discloses a channel (fig. 5).



With regard to claims 4 and 16, as best as can be understood, Heckenhauer discloses a rotor having a plurality of slots (fig. 2, 3); a plurality of teeth (fig. 3-9), each tooth comprising a main body including a slot (24; fig. 5), two planar surfaces (22) engaged with the slot of the rotor (fig. 3; Examiner notes the holder of the rotor encompasses a slot), at least one cutting face (fig. 9); wherein a force applied to the tooth in the plane of the rotor is transferred from the tooth to the rotor via the planer surfaces; and wherein the cutting face includes at least two tips (41a, 41b, 41c, 41d; Examiner notes the claim does not require the tips to be cutting tips, therefore any edge

constitutes a “tip”) perpendicular to each other (fig. 9); and fixing means (fig. 3) for retaining each tooth in a corresponding slot in the rotor (fig. 3). As to the through hole in alignment with a respective through hole in the rotor, Examiner notes the slots between holders (12), the holder having a through hole and through holes between the planar surfaces (22) of the tooth (fig. 5).

With regard to claim 17, Heckenhauer discloses a slot.

With regard to claim 18, Heckenhauer discloses planar surfaces disposed generally parallel to said cutting face.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-15 as best as can be understood rejected under 35 U.S.C. 103(a) as being unpatentable over Heckenhauer (4,193,638). With regard to claim 5, Heckenhauer does not disclose the radius of the rotor varying around the circumference. It would have been obvious to the skilled artisan at the time of the invention to construct Heckenhauer having a rotor with a radius that varies around the circumference because determining the optimal value of a result effective variable (i.e., the radius) involves only routine skill in the art. See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Furthermore, Examiner notes Applicant has failed to positively recite any criticality as it relates to a varying radius of the rotor. In the absence of any positively stated criticality to radius

variances, such would result from routine engineering and practices and does not in itself warrant patentability.

Additionally, Examiner notes clear antecedent basis for recitations, “the radius” and “the circumference” has not been established.

With regard to claims 6-15 as best as can be understood, Heckenhauer discloses a rotor having a plurality of slots (fig. 2, 3); a plurality of teeth (fig. 3-9), each tooth comprising a main body including a slot (24; fig. 5), two planar surfaces (22) engaged with the slot of the rotor (fig. 3; Examiner notes the holder of the rotor encompasses a slot), at least one cutting face (fig. 9); wherein a force applied to the tooth in the plane of the rotor is transferred from the tooth to the rotor via the planer surfaces; and wherein the cutting face includes at least two tips (41a, 41b, 41c, 41d; Examiner notes the claim does not require the tips to be cutting tips, therefore any edge constitutes a “tip”) perpendicular to each other (fig. 9); and fixing means (fig. 3) for retaining each tooth in a corresponding slot in the rotor (fig. 3). Heckenhauer does not disclose the rotor to be a polygon. It would have been obvious to the skilled Artisan to construct the rotor of any shape as such selection requires only routine skill in the art. Further, *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) The court held that the configuration of the claimed invention was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed invention as significant. Therefore the selection of a specific shape of the rotor being polygonal or the number of sides of the polygon are all obvious mechanical expedients and do not in itself warrant patentability over the prior art.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

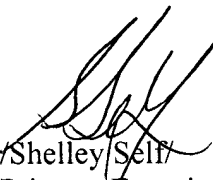
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelley Self whose telephone number is 571-272-4524. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on 571-272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/588,348
Art Unit: 3725

Page 8

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Shelley Self
Primary Examiner
Art Unit 3725

January 27, 2008